BTEC Assignment Brief

Qualification	Pearson BTEC International Level 3 Subsidiary Diploma in Health and Social Care Pearson BTEC International Level 3 Foundation Diploma in Health and Social Care Pearson BTEC International Level 3 Diploma in Health and Social Care Pearson BTEC International Level 3 Extended Diploma in Health and Social Care Pearson BTEC International Level 3 Extended Diploma in Health and Social Care (Health Studies)
Unit number and title	**Unit 22: Biochemistry for Health**
Learning aims	Learning aim A: Explore how the structure of biological molecules affects metabolism Learning aim B: Explore the action of biological molecules in metabolic processes Learning aim C: Examine the principles of biochemistry in industry.
Assignment title	What is biochemistry?
Assessor	
Issue date	
Hand in deadline	

Vocational Scenario or Context	You are completing your Pearson BTEC International Level 3 Qualification in Health and Social Care Qualification. You are considering the career that you would like to move into. You have decided to apply for a biochemistry degree but you are currently considering whether to become a healthcare scientist in a national health service or go into private industry. You decide to investigate further into what biochemistry involves, and how it is used in the healthcare sector.

Task 1	You have to write a report that uses use research, experimental data and experimental outcomes. The report will evaluate the structure, function and role of inorganic and organic molecules, and their impact on metabolism. Your report will also assess the relevance of the structures of carbon, hydrogen, nitrogen and oxygen to the metabolism of biological molecules including proteins, fats, carbohydrates and haemoglobin. Your report must include: ● an explanation of the structures of carbon, hydrogen, nitrogen and oxygen and how they produce organic and inorganic biological molecules ● an investigation of the nature, function and role of atoms, and the structure and function of organic and inorganic molecules and their impact on metabolism.
Checklist of evidence required	A report on the structure of atoms, the structure, function and role of inorganic and organic molecules, and the principles of metabolism.

Criteria covered by this task:	
Criteria reference	To achieve the criteria you must show that you are able to:
A.D1	Evaluate the structure, function and role of inorganic and organic molecules, and their impact on metabolism.
A.M1	Assess the relevance of the structures of carbon, hydrogen, nitrogen and oxygen to the metabolism of biological molecules, proteins, fats, carbohydrates and haemoglobin.
A.P1	Explain the structures of carbon, hydrogen, nitrogen and oxygen, and how they produce organic and inorganic biological molecules.
A.P2	Investigate the nature, function and role of atoms, and the structure and function of organic and inorganic molecules and their impact on metabolism.

Task 2	For your second task you need to report on how the structure, functions and action of biomolecules affect metabolic rates. The report must include an evaluation of how the structure, functions and action of biomolecules affect metabolic rates and an assessment of the impact of factors affecting enzyme activity on metabolic processes and metabolic rates. Your report should also include: ● an explanation of the structure and the physical and chemical properties of biomolecule and nucleic acids ● an investigation of the factors affecting enzyme activity and the enzymatic extraction of DNA.
Checklist of evidence required	A report on how the structure, function and action of biomolecules affect metabolic rates.

Criteria covered by this task:	
Criteria reference	To achieve the criteria you must show that you are able to:
B.D2	Evaluate how the structure, functions and action of biomolecules affect metabolic rates.
B.M2	Assess the impact of factors affecting enzyme activity on metabolic processes and metabolic rates.
B.P3	Explain the structure, and physical and chemical properties of biomolecules and nucleic acids.
B.P4	Investigate the factors affecting enzyme activity and the enzymatic extraction of DNA.

Task 3	Your final report examines the application of biochemistry to health care. You must evaluate how biological molecules and their role in metabolism influence current research and development of techniques and technology in treating metabolic disorders and assess the impact of DNA sequencing in the development of treatment therapy for metabolic disorders You must also include: ● an explanation of the aetiology of metabolic disorders of genetic and endocrine origins and an explanation the concept and uses of enzymes in biochemistry in the diagnosis and treatment of metabolic disorders and diseases, including DNA profiling and sequencing.
Checklist of evidence required	A report on metabolic disorders and diseases, and how biotechnology is used in current medical research to develop techniques and technology for treating metabolic disorders.

Criteria covered by this task:	
Criteria reference	To achieve the criteria you must show that you are able to:
C.D3	Evaluate how biological molecules and their role in metabolism influence current research and development of techniques and technology in treating metabolic disorders.
C.M3	Assess the impact of DNA sequencing in the development of treatment therapy for metabolic disorders.
C.P5	Explain the aetiology of metabolic disorders of genetic and endocrine origins.
C.P6	Explain the concept and uses of enzymes in biochemistry in the diagnosis and treatment of metabolic disorders and diseases, including DNA profiling and sequencing.

Sources of information to support you with this Assignment	**Websites:** https://iubmb.org/ https://nyuad.nyu.edu/en/research/faculty-labs-and-projects.html
Other assessment materials attached to this Assignment Brief	N/A

Note:

Applications for degree courses leading to professional qualifications benefit from the student being able to demonstrate a knowledge of the vocational area. This scenario allows the student to link the knowledge gained in the unit to the application process and see the relevance to of their studies to the choices they are faced with at this stage.

Task 1 has to be backed up by research and both experimental outcome and data. It would be best for the learner to use both their own data from classroom-based investigations and data they have found in their research to inform their evaluations.

Task 2 is a report on factors affecting metabolic rates, there is no requirement for experimental data for this task.

Task 3 is an application of their knowledge to diagnosis and treatment and is an opportunity for them to demonstrate their knowledge of the vocational area.